

## **ATTACHMENT 5**

### **NESHAPS EVALUATION**

**BROOKHAVEN**  
NATIONAL LABORATORY

managed by Brookhaven Science Associates  
for the U.S. Department of Energy

## Memo

*Date:* September 30, 1999  
*To:* Steve Moss  
*From:* Jerry Simiele *JS*  
*Subject:* BGRR Pile Fan Sump Removal

As per your request, the subject removal action being conducted under CERCLA requirements was reviewed for NESHAP compliance issues. As a CERCLA removal action, the project is exempt from the applicable NESHAP permitting requirements found in 40 CFR 61.96. Furthermore, based on the source term presented in BGRR-SE-99-02, *Unreviewed Safety Issue Determination and Safety Evaluation for Pile Fan Sump Removal*, and CAP88-PC modeling, the project activities would result in a hypothetical maximum exposed individual receiving less than 1.0E-05 mrem as documented in Attachment 1. Consequently, the project would also be exempt from permitting requirements in accordance with 40 CFR 61.96(b) since the offsite dose potential is less than 0.1 mrem.

Although this activity is being conducted under CERCLA, the evaluation of potential radioactive air emissions, implementation of appropriate control measures consistent with BNL's environmental ALARA policy, and air monitoring to quantify actual emissions are substantive requirements (i.e., applicable or relevant and appropriate requirements) for remediation of radiologically contaminated sites.

Attachment 1 provides a conservative evaluation of potential radioactive air emissions assuming a soil resuspension factor of 1.0E-03. It is recommended the appropriate control measures requirement be satisfied by making use of soil fixatives, covers or work suspensions during periods of high wind to minimize soil resuspension. Also, implementation of a local air sampling program designed to distinguish potential contamination from background is recommended to quantify any actual emissions.

Please contact me on extension 8107 with any questions regarding this assessment.

GAS:rt

Cc: K. Carney  
R. Lee  
S. Pulsford

EC5220.99

Version 2.00

## Clean Air Act Assessment Package - 1988

## S Y N O P S I S   R E P O R T

Non-Radon Population Assessment

Sep 30, 1999 08:10 am

Facility: BGRR Pile Fan Sump Removal

Address:

City:

State: NY

Zip: 11973

Source Category: Environmental

Source Type: Area

Emission Year: 1999

Comments: BGRR-SE-99-02 Source Term Inventory as of 9/21/99  
Resuspension Factor of 1.0E-03

Effective Dose Equivalent  
(mrem/year)

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9.39E-06

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At This Location: 3000 Meters South Southwest

Dataset Name: BGRR Sump

Dataset Date: Sep 30, 1999 08:10 am

Wind File: C:\CAP88PC2\WNDFILES\BNL\_1998.WND

Population File: C:\CAP88PC2\POPFILES\BNL98A.POP

## MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 3000 Meters South Southwest  
 Lifetime Fatal Cancer Risk: 8.98E-11

## ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	1.96E-06	1.14E-04
BREAST	8.86E-07	6.20E-05
R MAR	8.30E-06	4.49E-04
LUNGS	3.05E-05	1.42E-03
THYROID	9.10E-07	6.38E-05
ENDOST	8.99E-05	4.42E-03
RMNDR	4.62E-06	2.41E-04
EFFEC	9.39E-06	4.69E-04

## FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	0	0	0.00E+00	0.00E+00
LESS THAN 1.0E-06	5053191	5053191	6.74E-08	6.74E-08

## RADIONUCLIDE EMISSIONS DURING THE YEAR 1999

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
CO-60	Y	1.00	5.8E-09	5.8E-09
SR-90	D	1.00	3.2E-07	3.2E-07
Y-90	Y	1.00	3.2E-07	3.2E-07
CS-137	D	1.00	4.6E-07	4.6E-07
BA-137M	D	1.00	4.3E-04	4.3E-04
AM-241	W	1.00	1.2E-08	1.2E-08
H-3	*	0.00	6.7E-05	6.7E-05
EU-155	W	1.00	1.8E-08	1.8E-08
U-235	Y	1.00	2.6E-09	2.6E-09
U-238	Y	1.00	3.9E-08	3.9E-08
PU-238	Y	1.00	9.8E-09	9.8E-09
PU-239	Y	1.00	3.8E-08	3.8E-08
PU-240	Y	1.00	3.8E-08	3.8E-08

## SITE INFORMATION

Temperature: 10 degrees C  
Precipitation: 115 cm/y  
Mixing Height: 2000 m

## SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.

Area (sq m): 100.

Plume Rise

Pasquill Cat:

A

B

C

D

E

F

G.

Zero:

0.

0.

0.

0.

0.

0.

0.

## AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density:	5.83E-02
Milk Cattle Density:	8.56E-02
Land Fraction Cultivated for Vegetable Crops:	1.88E-02

## POPULATION DATA

Direction	Distance (m)						
	875	2000	2500	3000	9625	24000	40000
N	0	0	0	1	4650	0	94925
NNW	0	0	0	1	7845	0	211745
NW	0	0	0	1	18410	1605	137435
WNW	0	0	0	1	42735	59885	135
W	0	0	0	1	50715	137075	243225
WSW	0	97	0	1	38830	147520	360480
SW	0	198	0	1	22325	66440	3495
SSW	0	0	0	1	21875	1120	0
S	0	0	0	1	15900	35	0
SSE	0	0	0	1	22925	0	0
SE	0	0	0	1	9270	16325	0
ESE	0	0	0	1	6375	7080	0
E	0	0	0	1	3095	765	17765
ENE	0	0	0	1	2540	0	13175
NE	0	0	0	1	3015	0	0
NNE	0	0	0	1	7740	0	7125

Direction	Distance (m)	
	56000	72000
N	252075	262180
NNW	108585	54880
NW	124535	104675
WNW	217780	131090
W	227190	373120
WSW	427075	778140
SW	0	0
SSW	0	0
S	0	0
SSE	0	0
SE	0	0
ESE	0	0
E	9250	585
ENE	15220	2300
NE	13750	33525
NNE	45010	66315